

Test Results

Initially we wanted to present our sentiment analysis score using a metric on a scale of *Very Negative*, *Negative*, *Neutral*, *Positive*, *Very Positive*. We were having difficulty finding a training dataset with the following metrics as most of the datasets did not have *neutral* as a metric. For this reason, we decided on a percentage metric, for e.g if we have 10 tweets with 8 positive and 2 negative then that is 80% positive, as we found many datasets with only positive and negative metrics. In the interest of time, we also did not go through with the functionality of sending an email of the report (tweets and sentiment analysis score) to the user, instead we generated an excel file with the tweets and a text file with the score. These files automatically download after the program runs.

TC_0a:

We tried to first run the training model on our local machines for a training dataset of 20k rows but it stopped running and did not successfully train the model. We encountered a bug that led to the kernel being restarted when we did so. This led us to the conclusion that there was not enough space in the RAM of our machine to process the 20k rows.

```
Training with file: trainingdataset20k.csv
```

We then tried to run the model for 14k rows which successfully trained the model, which prompted us to take a value somewhere in the middle of our first 2 values (14k, 20k) and we trained our model with a dataset of 17k rows.

```
Training with file: trainingdataset14k.csv
Building Training Module Accomplished
CPU times: user 2min 2s, sys: 7.45 s, total: 2min 9s
Wall time: 2min 9s
```

```
Training with file: trainingdataset17k.csv
Building Training Module Accomplished
CPU times: user 2min 48s, sys: 8.78 s, total: 2min 57s
Wall time: 2min 57s
```

***note: we used the CPU of an applied machine learning class server that was given to us in another class, hence why it takes a short period of time to train the module.**

TC_1a:

In this test case, we tried different invalid inputs, first being an empty string "", and then a string with only spaces " ". To pass this test, both these inputs should be rejected and program should ask user to enter another keyword. We did this to make sure that the incorrect inputs are not accepted by the system

When we first started executing this test case we were getting major bugs. Firstly when we tried to enter an empty string, this is the error we were getting.

Empty String:

```
Please insert a keyword:  
  
-----  
TwitterError                                     Traceback (most recent call last)  
<timed exec> in <module>  
  
<ipython-input-3-798ee41be24e> in tweetsRetrieval(keyword)  
      1 def tweetsRetrieval(keyword):  
----> 2     retrievedTweets = twitter._api.GetSearch(keyword, count=100, lang='en', result_type='recent')  
      3     print('Retrieved tweets for the keyword ({0}): {1}'.format(key_word, len(retrievedTweets)))  
      4     testset[]  
      5     for tw in retrievedTweets:  
  
~/conde/envs/myenv4/lib/python3.8/site-packages/twitter/api.py in GetSearch(self, term, raw_query, geocode, since_id, max_id, until, since, count, lang, locale, result_type, include_entities, return_json)  
528         resp = self._RequestURL(url, 'GET', data_params)  
529  
--> 530     data = self._ParseAndCheckTwitter(resp.content.decode('utf-8'))  
531     if return_json:  
532         return data  
  
~/conde/envs/myenv4/lib/python3.8/site-packages/twitter/api.py in _ParseAndCheckTwitter(self, json_data)  
4986         raise TwitterError(({'message': 'Unauthorized'})  
4987     raise TwitterError(({'Unknown error': '(0)'.format(json_data)}))  
--> 4988     self._CheckForTwitterError(data)  
4989  
4990     return data
```

Next, when we tried to input a string of just spaces, this is the error we were getting.

Spaces:

```
Please insert a keyword:  
  
-----  
TwitterError                                     Traceback (most recent call last)  
<timed exec> in <module>  
  
<ipython-input-3-798ee41be24e> in tweetsRetrieval(keyword)  
      1 def tweetsRetrieval(keyword):  
----> 2     retrievedTweets = twitter._api.GetSearch(keyword, count=100, lang='en', result_type='recent')  
      3     print('Retrieved tweets for the keyword ({0}): {1}'.format(key_word, len(retrievedTweets)))  
      4     testset[]  
      5     for tw in retrievedTweets:  
  
~/conde/envs/myenv4/lib/python3.8/site-packages/twitter/api.py in GetSearch(self, term, raw_query, geocode, since_id, max_id, until, since, count, lang, locale, result_type, include_entities, return_json)  
528         resp = self._RequestURL(url, 'GET', data_params)  
529  
--> 530     data = self._ParseAndCheckTwitter(resp.content.decode('utf-8'))  
531     if return_json:  
532         return data  
  
~/conde/envs/myenv4/lib/python3.8/site-packages/twitter/api.py in _ParseAndCheckTwitter(self, json_data)  
4986         raise TwitterError(({'message': 'Unauthorized'})  
4987     raise TwitterError(({'Unknown error': '(0)'.format(json_data)}))  
--> 4988     self._CheckForTwitterError(data)  
4989  
4990     return data
```

However after spending some time debugging the code we realized that we need to create a while loop condition that would weed out any invalid inputs and then ask the user to input a valid input. This is the code change we implemented.

Fixed Code

```
while key_word.isspace()==True or len(key_word)==0:  
    key_word= input("You have entered an empty string or a string of spaces, please insert a valid keyword: ")  
      
    
```

After this implementation, this is how our program reacts, when an empty string is entered or when a string of spaces is entered.

Empty String (Fixed):

```
Please insert a keyword:  
  
You have entered an empty string or a string of spaces, please insert a valid keyword: 
```

Spaces (Fixed)

```
Please insert a keyword:  
  
You have entered an empty string or a string of spaces, please insert a valid keyword: 
```

As you can see our code is now outputting the expected result instead of giving an error and crashing the program. This test case was successful.

TC_1b:

In this test, We made sure that the input we enter is accepted by the system, to do so we tried different inputs, first being special characters or symbols such as (symbols:!,@,#,\$), we then try a one-word (“Egypt”), and we then try 2 words with a space (“Egypt is”). We did not encounter any bugs during this test case.

```
Please insert a keyword: !  
Retrieved tweets for the keyword (!): 69  
  
Overall Positive Sentiment for:! with the Positive Sentiment score of 63.768115942028984%  
Sentiment Analysis Report For Key Word: !  
  
Tweets Retrieved: 69  
  
Tweets Labeled as Positive: 44  
  
Tweets Labeled as Negative: 25  
  
Tweets Table:  
  
CPU times: user 2.76 s, sys: 16.4 ms, total: 2.78 s  
Wall time: 7.11 s
```

```
Please insert a keyword: $  
Retrieved tweets for the keyword ($): 63  
  
Overall Positive Sentiment for:$ with the Positive Sentiment score of 69.84126984126983%  
Sentiment Analysis Report For Key Word: $  
  
Tweets Retrieved: 63  
  
Tweets Labeled as Positive: 44  
  
Tweets Labeled as Negative: 19  
  
Tweets Table:  
  
CPU times: user 2.79 s, sys: 13.8 ms, total: 2.8 s  
Wall time: 16.9 s
```

```
Please insert a keyword: Egypt  
Retrieved tweets for the keyword (Egypt): 100  
  
Overall Positive Sentiment for:Egypt with the Positive Sentiment score of 85.0%  
Sentiment Analysis Report For Key Word: Egypt  
  
Tweets Fetched: 100  
  
Tweets Labeled as Positive: 85  
  
Tweets Labeled as Negative: 15  
  
Tweets Table:  
  
CPU times: user 3.22 s, sys: 1.06 ms, total: 3.22 s  
Wall time: 8.93 s
```

```
Please insert a keyword: Egypt is  
Retrieved tweets for the keyword (Egypt is): 100  
  
Overall Positive Sentiment for:Egypt is with the Positive Sentiment score of 96.0%  
Sentiment Analysis Report For Key Word: Egypt is  
  
Tweets Fetched: 100  
  
Tweets Labeled as Positive: 96  
  
Tweets Labeled as Negative: 4  
  
Tweets Table:  
  
CPU times: user 3.08 s, sys: 16.1 ms, total: 3.1 s  
Wall time: 7.4 s
```

TC_2a:

The next test we ran was the expected Number of Tweets based on Popularity of the Keyword. Basically, we are seeing how many tweets do we get for a popular tweet ("messi") vs a less popular tweet ("knafa") vs a tweet that we expect no results for

("dnsdniendeionwoenfnfowenfnfon")?. We set the maximum number of tweets to 100 for all the test data. We also did not encounter any bugs in this test case. Our results are attached below for reference.

```
Please insert a keyword: Messi
Retrieved tweets for the keyword (Messi): 100

Overall Positive Sentiment for: Messi with the Positive Sentiment score of 59.0%
Sentiment Analysis Report For Key Word: Messi

Tweets Fetched: 100

Tweets Labeled as Positive: 59

Tweets Labeled as Negative: 41

Tweets Table:

CPU times: user 3.13 s, sys: 18.8 ms, total: 3.14 s
Wall time: 6.87 s
```

```
Please insert a keyword: Knafa
Retrieved tweets for the keyword (Knafa): 26

Overall Positive Sentiment for: Knafa with the Positive Sentiment score of 57.69230769230769%
Sentiment Analysis Report For Key Word: Knafa

Tweets Fetched: 26

Tweets Labeled as Positive: 15

Tweets Labeled as Negative: 11

Tweets Table:

CPU times: user 2.49 s, sys: 51.8 ms, total: 2.54 s
Wall time: 20.1 s
```

```
Please insert a keyword: dnsdniendeionwoenfnfowenfnfon
Retrieved tweets for the keyword (dnsdniendeionwoenfnfowenfnfon): 0
```

```
Please insert another keyword that is proper:
```

TC_2b:

In this test, we wanted to see if the Correct Number of Tweets are successfully retrieved based on User Specifications. We keep the keyword the same, so as to have the same popularity, and we try to fetch tweets setting the maximum number of tweets to 50, 100, 200. We first tried this with 200 tweets (attached below), this however did not work and only printed 100 tweets.

```
retrievedTweets = twitter_api.GetSearch(keyword, count=200, lang='en', result_type='recent')
```

```
Please insert a keyword: Palestine
Retrieved tweets for the keyword (Palestine): 100

Overall Positive Sentiment for:Palestine with the Positive Sentiment score of 78.0%
Sentiment Analysis Report For Key Word: Palestine

Tweets Fetched: 100

Tweets Labeled as Positive: 78

Tweets Labeled as Negative: 22

Tweets Table:

CPU times: user 3.46 s, sys: 22.9 ms, total: 3.48 s
Wall time: 9.37 s
```

We then tried to print 50 tweets which worked successfully, and 100 tweets which also worked successfully and was the maximum number of tweets we could retrieve with the Twitter API.

```
Please insert a keyword: Palestine
Retrieved tweets for the keyword (Palestine): 50

Overall Positive Sentiment for:Palestine with the Positive Sentiment score of 78.0%
Sentiment Analysis Report For Key Word: Palestine

Tweets Fetched: 50

Tweets Labeled as Positive: 39

Tweets Labeled as Negative: 11

Tweets Table:

CPU times: user 2.8 s, sys: 22.3 ms, total: 2.83 s
Wall time: 7.32 s
```

```
Please insert a keyword: Palestine
Retrieved tweets for the keyword (Palestine): 100

Overall Positive Sentiment for:Palestine with the Positive Sentiment score of 78.0%
Sentiment Analysis Report For Key Word: Palestine

Tweets Fetched: 100

Tweets Labeled as Positive: 78

Tweets Labeled as Negative: 22

Tweets Table:

CPU times: user 3.46 s, sys: 22.9 ms, total: 3.48 s
Wall time: 9.37 s
```

TC_2c:

In this test case we performed a human check to see if each retrieved tweet has the user keyword in it. We did this to ensure only relevant tweets are being extracted from the server.

The first keyword we checked was “big mac”. This is a screenshot of the corresponding excel file.

	Tweet	Time	Result	Search_Term	Does it contain keyword?
2	Un big Mac slouplait 😂 https://t.co/g6guv4jimL @MissDomergue @litch_26 @RateMyWifeIex I would munch it on like you love your big mac lol x 😊 😊 😊 😊 😊 😊	2020-12-0	positive	Big Mac	Yes
3	@Sflum @PPR_Org @Inn_kennedy @Jwhitney_cute @Hughmuholand Aww Stephen you absolute legend for bidding. Thank you so much!! ❤️ ☺️ Gutted for ye you didn't get the final bid on them. Me ne	2020-12-0	positive	Big Mac	Yes
4	@mbandi Big Sur had 1 feature i couldn't live without... testing whether your software & my software work on Big Sur! Happy to report Arduino 1.8.13 and Teensyduino 1.5.3 work fine with Big Sur, at least on m	2020-12-0	positive	Big Mac	Yes
5	@Jmrunsfar @thefarmarmejones That was as crushing of an unexpected loss that i can recall in a non-bowl game or a game that didn't involve Ball State. But the reaction of "How dare he!" and "UT is a better situation t	2020-12-0	positive	Big Mac	Yes
6	@McDonalds Better than the Big Mac	2020-12-0	positive	Big Mac	Yes
7	@McDonaldsUK disappointed to find i have no cheese on the top layer of my big Mac!!!! https://t.co/kfQFWKNZ	2020-12-0	negative	Big Mac	Yes
8	@McGibson1301 So in other words Mac jones has really good WR's that make big plays while Trask manages and drives the field 😊 😊 ...	2020-12-0	positive	Big Mac	Yes
9	Menu Big Mac maxi Best of Frites coca ... https://t.co/HFZw9tTgP	2020-12-0	positive	Big Mac	Yes
10	@McDonalds What would like is if the Big Mac went back to it's original size! Compared to the 80's what we see today is only 2/3 the size it used to be and charged more for it.	2020-12-0	negative	Big Mac	Yes
11	RT @TheFoodKing00 #Food #TwitterFood #McDonalds #BigMac #FastFood #Cheeseburger Dang! The Big Mac ain't so big anymore. Where's the beef..	2020-12-0	negative	Big Mac	Yes
12	@BigMacUltra Big Mac is a Pizza Tower fan https://t.co/VT5nG443F	2020-12-0	positive	Big Mac	Yes
13	NOW PLAYING Yung G (@YUNGOFFICIAL99) - Made A Way ft. Big Homie Mac	2020-12-0	positive	Big Mac	Yes
14	@dilidog Her in Geneva they call it burger sauce, apparently it's a knock off of McDonalds Big Mac sauce.	2020-12-0	negative	Big Mac	Yes
15	RT @bridge123gooooo: Fact Check: @Kloeffler's health care plan is a sham & won't protect people w/ pre-existing conditions. Just as @Reve...	2020-12-0	negative	Big Mac	Yes
16	@ubereats_uk why haven't I received an update as to why I only received a normal big mac despite ordering, and paying, for a double big mac. I submitted this as an issue last week and still no update. sort it out	2020-12-0	negative	Big Mac	Yes
17	@Eninger44 @mammyfield She is to beauty what a Big Mac is to food.	2020-12-0	negative	Big Mac	Yes
18	RT @bridge123gooooo: Fact Check: @Kloeffler's health care plan is a sham & won't protect people w/ pre-existing conditions. Just as @Reve...	2020-12-0	negative	Big Mac	Yes
19	Imagine spending some big bucks on a Mac Pro last year only for it to be replaced by a way-superior Apple Silicon version in less than two years * https://t.co/Mk0jQYsRj	2020-12-0	negative	Big Mac	Yes
20	Greyhawk fans: Inspired by the real-world Gough Map and the excellent @Lindbygee, Big Mac is asking about the rivers of Greyhawk: https://t.co/ftvBjsjB8 Has anyone plotted the various river systems to show whi	2020-12-0	positive	Big Mac	Yes
21	Disappointed with @McDonaldsUK Pontefract. Just taken my son there after nursery and got a happy meal and big mac meal. Got home and the happy meal had no chips and the big mac had no cheese or gherkins. On	2020-12-0	positive	Big Mac	Yes
22	Upcoming reading post-delivery of Big Mac's book that's on every EOY list! @Thomas_mac's debut novel!! I read the original of Rein Gold a long way back, looking forward to	2020-12-0	positive	Big Mac	Yes
23	@MaryAgn2634659 @gregarter34 @Fairyarts @AOC Show us the numbers. What's the profit margin on the sale of a Big Mac?	2020-12-0	positive	Big Mac	Yes
24	@bitcolectr It is a coin whereby the owners sell 500K Slink on a bi weekly basis in order to support his addiction to Big Mac. Sergey himself is literally powered by #chainlink https://t.co/oYKbLEc3HL	2020-12-0	positive	Big Mac	Yes
25	Is the Big Mac The greatest burger of all time because it sells? No. Same with music... just because it's sells doesn't make it good. Some of us prefer gourmet burgers made by real chefs whose life purpose is burgers. Not f	2020-12-0	positive	Big Mac	Yes
26	@Eninger44 @mammyfield She is to beauty what a Big Mac is to food.	2020-12-0	positive	Big Mac	Yes
27	RT @bridge123gooooo: Fact Check: @Kloeffler's health care plan is a sham & won't protect people w/ pre-existing conditions. Just as @Reve...	2020-12-0	negative	Big Mac	Yes
28	I want mcdonald m, paket big Mac extra sauce less ice :)	2020-12-0	positive	Big Mac	Yes
29	@Big_Mac_Booty @SamShapiro @MySportsUpdate im a genius!!	2020-12-0	negative	Big Mac	Yes
30	@MacroPoloChina I can tell I straight up the Big Mac in Beijing tastes nothing like the ones in America	2020-12-0	positive	Big Mac	Yes
31	Who the hell on earth doesn't like big mac chicken	2020-12-0	negative	Big Mac	Yes
32	Just look for a fat fuck with the new double Big Mac package on the dashboard https://t.co/sVeYBXxKdB	2020-12-0	positive	Big Mac	Yes
33	RT @PhilstarNews: Now that's what you call a Big Mac! 🍔🍔 McDonald's Capital Town, the largest McDonald's branch in the Philippines, is no...	2020-12-0	positive	Big Mac	Yes
34	@bbbycino big mac middle bun	2020-12-0	negative	Big Mac	Yes
35	@applejuice big mac middle bun	2020-12-0	negative	Big Mac	Yes
36	@Krokotakki big mac	2020-12-0	positive	Big Mac	Yes

This is just a glimpse of the file, but from this file we found that 100% of the tweets had the keyword Big Mac inside it.

The next keyword we tried for testing was “Neymar”. Once again we found that of the tweets retrieved 100% of the tweets had the keyword “Neymar” inside it.

	Tweet	Time	Result	Search_Term	Keyword in tweet
0	RT @Neymoleque: Neymar gets emotional as he visits a reconstruction of his old house. All 4 family members slept in that room. Never forge...	2020-12-0	negative	Neymar	Yes
1	RT @GFFN: Neymar on Kylian Mbappé: "With Kylian, we are like brothers. It is a bit like I am his older brother, when we have to clip him b...	2020-12-0	positive	Neymar	Yes
2	RT @Neymoleque: Neymar gets emotional as he visits a reconstruction of his old house. All 4 family members slept in that room. Never forge...	2020-12-0	negative	Neymar	Yes
3	👉 Kylian Mbappé is open to a contract extension at PSG, but he wants certain sporting guarantees. He is paying close attention to the club's contract e	2020-12-0	negative	Neymar	Yes
4	Neymar on Kylian Mbappé: "With Kylian, we are like brothers. It is a bit like I am his older brother, when we have to clip him by the ear, give him a dressing d	2020-12-0	positive	Neymar	Yes
5	@Samir_Dabbab @GFFN I mean Champions League football is easy to obtain in France with a budget their size. Leadership is lacking at PSG compared to Dort	2020-12-0	positive	Neymar	Yes
6	RT @Neymoleque: Neymar gets emotional as he visits a reconstruction of his old house. All 4 family members slept in that room. Never forge...	2020-12-0	negative	Neymar	Yes
7	@tripimagic @DavidAmoyal But he was replaced and Roma managed to make C1 Semies and Top4 spot without him. The price yeah, it was low, but it was be	2020-12-0	negative	Neymar	Yes
8	@Jayza_03_Four_3_Blauded_Roman @CoachBrooksey @xGPhilosophy Neymar has been booked for unsportsmanlike conduct. Overall he's a pretty poor	2020-12-0	negative	Neymar	Yes
10	@neymarjr Yea, neymar you still got it	2020-12-0	negative	Neymar	Yes
11	@alvinisayid @NozAhmed @LlorisFC Neymar is by far the best player in the world. Grow up	2020-12-0	positive	Neymar	Yes
13	RT @Neymoleque: Neymar gets emotional as he visits a reconstruction of his old house. All 4 family members slept in that room. Never forge...	2020-12-0	negative	Neymar	Yes
14	RT @Neymoleque: Neymar gets emotional as he visits a reconstruction of his old house. All 4 family members slept in that room. Never forge...	2020-12-0	negative	Neymar	Yes
15	£15m net per season means he will be behind Ronaldo, Messi, Neymar and Bale in terms of salary. Is it justified? Nope. No way. https://t.co/1kkNT4FN0w	2020-12-0	negative	Neymar	Yes
16	@MaestroVerratti Nah, Neymar is the worlds best player bar only Messi and Ronaldo. Was glad to see him show that at Old Trafford to shut up the armchair	2020-12-0	positive	Neymar	Yes
17	Last 4 games we've conceded 7 goals and 5 of them have been from set pieces The other 2 goals we conceded was a last minute counter with 10 men and a ne	2020-12-0	positive	Neymar	Yes
18	Coutinho: "I am the first to ask myself to perform well. I know that the performance was not as expected." "Neymar and Messi together? I don't know what w	2020-12-0	positive	Neymar	Yes
19	RT @Route1futbol: Neymar [] and Messi [] together? Coutinho [] : "I don't know what will happen next season. All I can say is it is not t...	2020-12-0	negative	Neymar	Yes
20	Neymar [] and Messi [] together? Coutinho [] : "I don't know what will happen next season. All I can say is it is not the right time and we all	2020-12-0	negative	Neymar	Yes
21	RT @Neymoleque: Neymar gets emotional as he visits a reconstruction of his old house. All 4 family members slept in that room. Never forge...	2020-12-0	negative	Neymar	Yes
22	Neymar gets emotional as he visits a reconstruction of his old house. All 4 family members slept in that room. Never forget where you came from! https://t.co/...	2020-12-0	negative	Neymar	Yes
23	RT @TheEuropeanLad: Neymar is 28 years old with still many prime years ahead of him. CL nights shouldn't be the only nights people see a pl...	2020-12-0	negative	Neymar	Yes
24	RT @BarcaUniversal: Neymar is putting pressure on PSG. The Brazilian will only renew if the Parisien club signs Lionel Messi. — Cuatro ht...	2020-12-0	positive	Neymar	Yes
26	@3rlingHaaland @UtdBA_Rad repping Neymar after slandering him uno	2020-12-0	positive	Neymar	Yes
27	RT @baracenter: Coutinho: "Messi and Neymar together? I don't know what will happen, I can only talk about myself. But of course we all li...	2020-12-0	positive	Neymar	Yes
28	RT @baracenter: Coutinho: "Messi and Neymar together? I don't know what will happen, I can only talk about myself. But of course we all li...	2020-12-0	positive	Neymar	Yes
29	Neymar: "messi or I'll leave" https://t.co/W1NCvWHTd	2020-12-0	positive	Neymar	Yes
30	RT @Neymoleque: Neymar gets emotional as he visits a reconstruction of his old house. All 4 family members slept in that room. Never forge...	2020-12-0	negative	Neymar	Yes
31	Coutinho: "Messi and Neymar together? I don't know what will happen, I can only talk about myself. But of course we all like to play with the best." #BarcaJu	2020-12-0	positive	Neymar	Yes
32	If united qualify for the ro16 I'll have neymar and mbappe 🔥🔥 https://t.co/Aj18Mg8oWH https://t.co/G4z7OpzVMp	2020-12-0	positive	Neymar	Yes
33	Coutinho: "Messi and Neymar together? I don't know what will happen, I can only talk about myself. But of course we all like to play with the best."	2020-12-0	positive	Neymar	Yes
34	Rumi Kato, a member of same group said she looks like Neymar, a soccer superstar! https://t.co/e1Y7UNo92C https://t.co/DkUcxkYtWO	2020-12-0	positive	Neymar	Yes
35	Anyone have advice on how to make coins in FUT? I got 160k right now, no team, and didn't play Champs this weekend. I'm aiming to get Neymar soon as he	2020-12-0	positive	Neymar	Yes
36	@tiufano @neymarjr next week buy temennya neymar @KMbpape	2020-12-0	positive	Neymar	Yes

Thus in both cases our program outputted the expected result and passed the test case.

TC_2d:

In this test, we wanted to test out how recent the tweets that are being returned are in comparison to a worldwide recent event. To do this, we input the keyword (Barcelona Cadiz), to which we expect our program to extract tweets about the most recent football game which

happened on the 6th of December between FC Barcelona

RT @sportbible: Cadiz are the first newly-promoted side to beat Barcelona, Real Madrid, and Athletic Bilbao - the three clubs who've never...	2020-12-07 11:34:54	positive	Barcelona Cadiz
FC Barcelona head coach Ronald Koeman commented on his club's 2-1 defeat to Cadiz in La Liga at a news conference on Saturday. "I think it possibly is a lack of concentration," said Koeman before adding: "I think we lack also some character when we did not have the possession. https://t.co/tUOepqUOn	2020-12-07 11:34:29	positive	Barcelona Cadiz
RT @sportbible: Cadiz are the first newly-promoted side to beat Barcelona, Real Madrid, and Athletic Bilbao - the three clubs who've never...	2020-12-07 11:33:41	positive	Barcelona Cadiz
RT @sportbible: Cadiz are the first newly-promoted side to beat Barcelona, Real Madrid, and Athletic Bilbao - the three clubs who've never...	2020-12-07 11:26:51	positive	Barcelona Cadiz
RT @Cadic_CFIN: If this truck can go through there, why can't Cádiz C.F. beat F.C. Barcelona? 🚛 #VamosCádiz #EseCádizOe https://t.co/DweXN...	2020-12-07 11:26:07	negative	Barcelona Cadiz
RT @Cadic_CFIN: If this truck can go through there, why can't Cádiz C.F. beat F.C. Barcelona? 🚛 #VamosCádiz #EseCádizOe https://t.co/DweXN...	2020-12-07 11:22:10	negative	Barcelona Cadiz
RT @Martyboy15: No one in football have a divine right to win every game.cup.title we've been spoilt over the years. ie. Barcelona bigges...	2020-12-07 11:17:46	positive	Barcelona Cadiz
RT @legitngnews: Ousmane Dembele played for 45 minutes in @FCBarcelona 's defeat to Cadiz over the weekend. The club confirmed that the Fr...	2020-12-07 11:17:56	positive	Barcelona Cadiz
Ousmane Dembele played for 45 minutes in @FCBarcelona 's defeat to Cadiz over the weekend. The club confirmed that the Frenchman picked an injury. "Tests have shown that the French player has an elongation in the hamstrings of his right thigh" 🚨 https://t.co/x0KfIquAPgk	2020-12-07 11:10:18	negative	Barcelona Cadiz

Looking at the dates of all the tweets above, the most recent tweets are all a day after on the 7th of December and they discuss the football game. We did not face any bugs during this test.

TC_3a:

In this test case we wanted to check if our software is conducting valid NLP sentiment analysis or not. To do this, we will hand label the sentiments of retrieved tweets and then check accuracy of predictions. If average model accuracy is greater or equal to 75% then our model is effective

The first keyword we typed was Christmas. This was the corresponding excel files with human labels and software labels.

	Tweet	Time	Software Prediction	Human Label	Correct	
0	It's almost Christmas I don't know if I should hang the lights or my self 😂	2020-12-07	positive	negative	0	
1	RT @maisie_blm: Do I know anyone that makes earrings? I want some Christmas earrings, I keep losing mi	2020-12-07	negative	negative	1	
2	RT @maddieshortcake: the barbie pink christmas room of my dreams 🎅💕 ↗ https://t.co/LqSYlu2g8N	2020-12-07	negative	negative	1	
3	RT @shualorlmoon: when joshua said that he receives gifts both on christmas and his birthday despite th	2020-12-07	positive	positive	1	
4	When it's your school prom day and the theme is Christmas ❤️ https://t.co/l5hgjGzG6	2020-12-07	positive	positive	1	
5	RT @Colledspring: Prepare to be spellbound with day 7 of our 12 Days of #Christmas #Giveaways! We ha	2020-12-07	positive	positive	1	
6	RT @TChartSwift: 🎅 US Spotify Update: #165. "Christmas Tree Farm" [+28] (+252,732 plays) *Peak 2020-12-07 positive	2020-12-07	positive	positive	1	
7	RT @SERVIDAD_ : Imagining receiving a christmas present like this)) https://t.co/BBeefqFA04	2020-12-07	positive	positive	1	
8	RT @lynewspaper: The most important Christmas rules. https://t.co/uPUEB5BYTB	2020-12-07	positive	positive	1	
9	RT @afrozezf: I will never forgive this country for the contempt it showed towards Muslims during Ramad	2020-12-07	negative	negative	1	
10	RT @Melodia_Muse: [TRANSLATION] 201207 Aron and Ren's To. Night Live translation thread Ren has a	2020-12-07	positive	positive	1	Model Accuracy
11	RT @kyuroppi: the boy's christmassy proposals sanguyen: pizza jacob: christmas tree + crime scene young: 2020-12-07 positive	2020-12-07	positive	positive	1	
12	Christmas Erza shoot up on my OF and Patreon (\$10 tier) now OwU https://t.co/mldqHtC5O https://t.co/2020-12-07	2020-12-07	positive	negative	0	76.67%
13	RT @IrishDocsEnv: ✨ IDE Christmas Hamper Competition ✨ Would you like to win a hamper of sustaine	2020-12-07	positive	positive	1	
14	RT @Melodia_Muse: [TRANSLATION] 201207 Aron and Ren's To. Night Live translation thread Ren has a	2020-12-07	positive	positive	1	
15	RT @PauldMcNamee: Want a lift? Here's the winner of the @bigissue Kids Christmas Cover Comp. It's a jc	2020-12-07	positive	positive	1	
16	A Christmas present for Bowie fans worldwide. I had the fabulous experience of watching CYHMMT twice	2020-12-07	positive	positive	1	
17	Who wants a Christmas card? Send me your address.	2020-12-07	positive	positive	1	
18	RT @Purenogluten: Enter our #festive #glutenfree #Christmas #baking #competition - to enter just follow	2020-12-07	positive	negative	0	
19	My sister did an amazing job & im so proud of her. She's only going to get better 🎉🎅 Christmas 2020-12-07 positive	2020-12-07	positive	positive	1	
20	RT @penguinalee: Hi guys I got a rt deal to @Xyrea04kim!! Can you guys help me this will be a christm	2020-12-07	positive	positive	1	
21	RT @BOOKSetc_online: Christmas Advent-Day 7 This interesting bundle of books has been handpicked 2020-12-07 positive	2020-12-07	positive	positive	1	
22	RT @SkinBaronEN: Take part in our christmas giveaway and win Bowie Knife Faded (FN). 🎁 What you nee	2020-12-07	positive	positive	1	
23	Great News: our ever-popular Antiques Forum want to bring you a Christmas Special on Tuesday; 2020-12-07 positive	2020-12-07	negative	negative	0	
24	@TheAA_UK Tucking into a wonderful Christmas dinner and feeling so stuffed after! #ThatfestiveFeeling	2020-12-07	positive	positive	1	
25	RT @MrProWestie: Free PC? 🎁 I've teamed up w/ @PCSpecialist & @AMD_UK to give away this Ry	2020-12-07	positive	positive	1	
26	RT @Number10cat: On the seventh day of Christmas my true love gave to me... seven swans-a-swimming,	2020-12-07	positive	negative	0	
27	Council 'very sorry' about Nottingham's Christmas market (probably kept us in it as was reported weeks a	2020-12-07	positive	positive	0	
28	Our home made Gin Advent Calendar - a different gin everyday, drawn at random. Day 7. Today it's Tanq	2020-12-07	positive	negative	0	

From the above we can see our model gave us an accuracy of 76.67%, which is quite impressive.

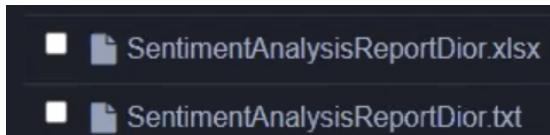
Next, we typed in the keyword “police”. This was the corresponding excel files with human labels and software labels.

	Tweet	Time	Software Prediction	Human Label	Correct			
0	RT @GDawg2k2: 2403 Americans Died at Pearl Harbor. That was 79 yr ago. 2857 Americans died 3 days ago! In the middle of !	2020-12-07 negative	negative	1				
1	RT @Tejasvi_Surya: WB police are a disgrace to India's famed police force. They have forgotten their constitutional duties.	2020-12-07 positive	negative	0				
2	RT @TopeAkinyode: Last week, police protested against 6 months unpaid allowances. The policemen took to the streets &#amp; 2020-12-07 negative	negative	1					
4	@dotty_place @DCC_DC_Police @PoliceChief: They should have been infiltrating hunts if they wanted to stop crime.	2020-12-07 positive	positive	1				
5	RT @zikokomag: It's time to weed out the sociopaths. If you know anyone that does more than 7 things on this list, you better 2020-12-07 positive	positive	1					
6	Siliguri: A senior Bharatiya Janata Party (BJP) worker died in the clashes between party members and West Bengal police in Si	2020-12-07 negative	negative	1				
7	RT @republic: BJP worker dies after clash with police, party demands President's Rule in West Bengal https://t.co/mrjitzInEQ	2020-12-07 positive	positive	1				
8	RT @MarianaRaines: Police currently at Opebi junction waiting for scape goat meanwhile this our generation are the greatest!	2020-12-07 negative	negative	1				
9	RT @Ejikeofeogbu1: Police stationed to apprehend #EndSARS protesters at the Lekki roundabout. Soldiers also seen at the ph	2020-12-07 negative	negative	1				
10	RT @Tejasvi_Surya: WB police are a disgrace to India's famed police force. They have forgotten their constitutional duties. T	2020-12-07 positive	negative	0				
11	@savndaniel [REDACTED] soldiers + police should be careful. Hope this doesn't trigger the end of [REDACTED], if not handled carefully.	2020-12-07 negative	negative	1				
12	RT @TheDailyPioneer: Police use tear gas shells&#amp;water cannon on #BJPYavaMorcha workers protesting aginst #WestBeng	2020-12-07 negative	negative	1				Model Accuracy 86.67%
13	RT @MoggMentum: Colchester football clubs chairman has come out this morning and told his supporters they are not welcom	2020-12-07 positive	positive	1				
14	RT @akela_lacy: "You keep bringing up 'defund.' You keep whining and saying that that's the reason you lost. Maybe you lost b	2020-12-07 negative	negative	1				
15	RT @swapan55: West Bengal BJP spokesman & barrister Kabir Shankar Bose has been under siege in his flat in Sramape	2020-12-07 positive	positive	1				
16	RT @IyanoluwaPill1: @TiamyuAdamsAb1 @SaharaReporters I'm surprised some people still think the #EndSars movement	2020-12-07 negative	negative	1				
17	RT @GistReel: New wave of #EndSARS protest has erupted in Lagos. Reports of heavy police and military presence in Lekki T	2020-12-07 negative	negative	1				
18	@CPMumbaiPolice @DGPMaharashtra Aripada Police station has not registered FIR against unknown person, but gave me NI	2020-12-07 positive	positive	1				
19	RT @MFVitches: Australians, you live in a failed state. Your elections are rigged, your federal police corrupt, your politicians r	2020-12-07 negative	negative	1				
20	RT @SaharaReporters: UPDATED: @PoliceNG, Soldiers Take Over Lekki Toll Plaza Sahara Reporters https://t.co/OPOfoibujC	2020-12-07 negative	negative	1				
21	RT @MuftiWahiduddin: Police did not allow protest march on Babri Masjid yesterday at Mandi House Delhi which is being organ	2020-12-07 negative	negative	1				
22	RT @GazetteNGR: EXCLUSIVE: Buhari plots retirement of southern Police AIG to clear paths for another inspector-general from	2020-12-07 negative	negative	1				
23	RT @Histreepix: In 2020 Gerard Batten was knighted and made the Metropolitan Police's official Witch Finder General after si	2020-12-07 positive	positive	1				
24	RT @SinghPramod2784: Terror suspects arrested by Delhi police Special cell :- 1: Shabbir Ahmed 2:Ayub Pathan 3:Riaz rathe	2020-12-07 negative	negative	1				
25	@OfficeofVa Be careful, all criminals think they are innocent... However looking at Mumbai police... seems like criminals are f	2020-12-07 negative	negative	1				
26	RT @strata_times: Hong Kong police security unit arrests eight over campus protest https://t.co/7cpikdlC1O	2020-12-07 positive	negative	0				
27	RT @yotikarma7: Bengal Police using completely unconstitutional methods like Water cannons, tear gas on protesters at BJP	2020-12-07 negative	negative	1				
28	RT @MarianaRaines: Police currently at Opebi junction waiting for scape goat meanwhile this our generation are the greatest!	2020-12-07 negative	negative	1				
29	RT @ReutersChina: Hong Kong police arrest eight over university protest as crackdown intensifies https://t.co/usugfDPwsp	2020-12-07 negative	negative	1				

In this instance, our model gave us an accuracy of 86.67%. When we average out the accuracy of both the keyword searches we get 81.67%. This is greater than our pass condition, which was an accuracy of 75%. Therefore our model does conduct valid NLP analysis as it passed this test case with flying colors.

TC_4a:

In this test, we set out to test if our program successfully returns an excel file of the tweets generated and a text file with the sentiment analysis score. We run the program using the keyword “Dior” and we see if it successfully generates an excel file (SentimentAnalysisReportDior.xlsx) with the tweets retrieved and a text file (SentimentAnalysisReportDior.txt) with the sentiment analysis score.



Tweet

0	RT @choi_bts2: Kim Jones (Dior Men's Design Director) : I love RM from BTS, as he is a really great guy and super cool
1	RT @srijama: Deep in every heart slumbers a dream, and the couturier knows it: every woman is a princess. Could anyone else in retail/hospitality think the general public have gotten really mean the last few weeks? I think you can
2	RT @szjiang: dior king & queen thing 🌸👑 cr startupdramafashion on IG https://t.co/5L7euLauOz
3	RT @TruttleBuffer Do it
4	RT @wet_bts: "Everyone I know is kind of crazy about him."-Kim Jones, Artistic Director of Dior. https://t.co/6xJGKQHgk
5	RT @Dior: A perfect purveyor of laid-back winter sports style, in these @DazedKorea images Sehun stands out in his new Dior look.
6	RT @szjiang: dior king & queen thing 🌸👑 cr startupdramafashion on IG https://t.co/5L7euLauOz
7	RT @badestoutfit: #RT : to try to win a repurposed dior toggle necklace & FOLLOW : the rules on instagram
8	RT @Dior: Go behind the scenes of the @DazedKorea editorial shoot featuring K-pop artist Sehun as he zips up his jacket in Paris. https://t.co/5L7euLauOz
9	RT @Dior: Go behind the scenes of the @DazedKorea editorial shoot featuring K-pop artist Sehun as he zips up his jacket in Paris. https://t.co/5L7euLauOz
10	RT @SeBaekOwnsAna: @weareoneEXO how hard is it to at least retweet sehun's Dior tweets merchie??? This is so cool
11	RT @imffii: Hunnie for dior "A loose little painting for practice" > #exoFanart #SEHUN #세훈 https://t.co/P78fZCqX
12	RT @noonyx_: I'm that distant friend.. but my loyalty 4ever locked in 💖
13	RT @georgianaA_fr @FEITICEIRA oomf I don't think u understand how much a million really is. also jeff bezos is even richer than you
14	RT @Stray_Kids: [SKZ VLOG] Changbin : 내끼의 끌로그 2English,Spanish,Japanese,Chinese&Thaisubtitles available
15	RT @Dior: Go behind the scenes of the @DazedKorea editorial shoot featuring K-pop artist Sehun as he zips up his jacket in Paris. https://t.co/5L7euLauOz
16	RT @choi_bts2: Kim Jones (Dior Men's Design Director) : I love RM from BTS, as he is a really great guy and super cool
17	RT @Dior: A vision of contemporary cool, K-pop star Sehun introduces the stylish new and exclusive #DiorSkin collection.
18	RT @szjiang: dior king & queen thing 🌸👑 cr startupdramafashion on IG https://t.co/5L7euLauOz
19	RT @mskaykaynicole: 💖 we locked 💖 fasho
20	RT @CourtneyUnique: 💖 I love my Quata for real 😊
21	@CourtneyUnique Fasho 💖
22	RT @choi_bts2: Kim Jones (Dior Men's Design Director) : I love RM from BTS, as he is a really great guy and super cool
23	RT @mskaykaynicole Yea hoe 😂
24	RT @Chartslisoo: 3 of JISOO's Photos are in The Top 9 Most Liked Posts on Dior Official Instagram Account. 😍 @Dior
25	RT @szjiang: dior king & queen thing 🌸👑 cr startupdramafashion on IG https://t.co/5L7euLauOz

SentimentAnalysisReportDior - Notepad

File Edit Format View Help

Sentiment Analysis Report For Key Word: Dior

Tweets Retrieved: 100

Tweets Labeled as Positive: 73

Tweets Labeled as Negative: 27

Ln 1, Col 1 100% Unix (LF) UTF-8

We also tested out running the same keyword twice to see if the files get overwritten with the latest tweets and sentiment analysis. To which it successfully did this with no bugs. As you can see below, the two different runs generate an excel file with different tweets.

		Tweet	Time	Result
0	RT @choi_bts2: Kim Jones (Dior Men's Design Director) : I love RM from BTS, as he is a really great guy and supe			
1	RT @srijaa_ma: Deep in every heart slumbers a dream, and the courtier knows it: every woman is a princess. Cl			
2	Anyone else in retail/hospitality think the general public have gotten really mean the last few weeks 🤔 think cu			
3	RT @srijaa: dior king & queen thing 🎩👑 cr startupdramafashion on IG https://t.co/5L7euLauOz			
4	@TruttleBuffer Do it			
5	RT @wet_bts: "Everyone I know is kind of crazy about him."-Kim Jones, Artistic Director of Dior. https://t.co/6x			
6	RT @Dior: A perfect purveyor of laid-back winter sports style, in these @DazedKorea images Sehun stands in			
7	RT @srijaa: dior king & queen thing 🎩👑 cr startupdramafashion on IG https://t.co/5L7euLauOz			
8	RT @badestoutfit: #RT : to try to win a repurposed dior toggle necklace &; FOLLOW : the rules on instagram			
9	RT @Dior: Go behind the scenes of the @DazedKorea editorial shoot featuring K-pop artist Sehun as he zips up v			
10	RT @SeBaekAwnsAa: @wearoneEXO how hard is it to at least retweet seuhn's Dior tweets merchie?? This			
11	RT @imffii: Hunnie for dior~A loose little painting for practice :>&; exofanart #SEHUN #세훈 https://t.co/P78l			
12	RT @noonyx_ : I'm that distant friend.. but my loyalty never locked in 🧑			
13	@georgiana_A_fr @FEITICEIRA omf! i don't think u understand how much a million really is. also jeff bezos is eve			
14	RT @Stray_Kids: [SKZ VLOG] Changbin : 데끼의 끌로그 English,Spanish,Japanese,Chinese&Thaisubtitles a			
15	RT @Dior: Go behind the scenes of the @DazedKorea editorial shoot featuring K-pop artist Sehun as he zips up v			
16	RT @choi_bts2: Kim Jones (Dior Men's Design Director) : I love RM from BTS, as he is a really great guy and supe			
17	RT @Dior: A vision of contemporary cool, K-pop star Sehun introduces the stylish new and exclusive #DiorSkin ca			
18	RT @srijaa: dior king & queen thing 🎩👑 cr startupdramafashion on IG https://t.co/5L7euLauOz			
19	RT @mskayakaincile: ❤️❤️ we locked 💬 fasho.			
20	RT @CourtneyUnique: ❤️❤️ I love my Quata for real 😊			
21	@CourtneyUnique Fasho 🎩👑			
22	RT @choi_bts2: Kim Jones (Dior Men's Design Director) : I love RM from BTS, as he is a really great guy and supe			
23	@mskayakaincile Yea hoe 🎩👑			
24	RT @Chartsisoo: 3 of JISOON's Photos are in The Top 9 Most Liked Posts on Dior Official Instagram Account. © @			
25	RT @srijaa: dior king & queen thing 🎩👑 cr startupdramafashion on IG https://t.co/5L7euLauOz			
1				
2	0 RT @OfficialMonstaX: 🎉 201205 #MONSTAXMELON MUSIC AWARDS 2020 has been con 2020-12-0 positive			
3	1 RT @femmeduardt: The Dior 'Junon' dress from 1949 https://t.co/Ubf1fd5ly4 2020-12-0 negative			
4	2 RT @gucciboiakai: Youngbin is wearing a Christian Dior Mens Bracelet https://t.co/zg51T5x 2020-12-0 positive			
5	3 RT @MEENAVOGUEE: DIOR STORE IN TOKYO. https://t.co/kchMCT41nn 2020-12-0 negative			
6	4 RT @srijaa: dior king & queen thing 🎩👑 cr startupdramafashion on IG https://t.c 2020-12-0 negative			
7	5 RT @kswthngs: sunwoo getting shy (2020) 🎩👑 https://t.co/UcrDq45i7 2020-12-0 positive			
8	6 RT @thelordbaebi: Guys I don't think you understand, every time you go past Dior there 2020-12-0 negative			
9	7 RT @OfficialMonstaX: 🎩👑#몬스타엑스 #문제 있지 🎩👑#Behind EP.209 'Love Kill' - COMEB 2020-12-0 positive			
10	8 RT @OfficialMonstaX: 🎩👑#MONSTAX #2020MAMA VOTING GUIDE ✓ Vote Category Wr 2020-12-0 positive			
11	dior bag, how can i say no? 2020-12-0 positive			
12	10 RT @OfficialMonstaX: 🎩#=MONSTAX #2020MAMA VOTING GUIDE ✓ Closing: 201205 11 2020-12-0 positive			
13	11 @dior_doll Yes pls tty 2020-12-0 positive			
14	12 @TruttleBuffer I can send link 2020-12-0 positive			
15	13 RT @hourlyjeeyeon: jyeon proposing omg 😊 주연 https://t.co/HkEfRvtx8i 2020-12-0 negative			
16	14 RT @clockforkn: Namjoon has been named as one of the best dressed in 2 international 2020-12-0 positive			
17	15 RT @choi_bts2: Kim Jones (Dior Men's Design Director) : I love RM from BTS, as he is a re 2020-12-0 positive			
18	16 Youngbin is wearing a Christian Dior Mens Bracelet https://t.co/zg51Ts0Mm 2020-12-0 positive			
19	17 RT @choi_bts2: Kim Jones (Dior Men's Design Director) : I love RM from BTS, as he is a re 2020-12-0 positive			
20	18 RT @MEENAVOGUEE: DIOR STORE IN TOKYO. https://t.co/kchMCT41nn 2020-12-0 negative			
21	19 RT @choi_bts2: Kim Jones (Dior Men's Design Director) : I love RM from BTS, as he is a re 2020-12-0 positive			
22	20 RT @femmeduardt: The Dior 'Junon' dress from 1949 https://t.co/Ubf1fd5ly4 2020-12-0 negative			
23	21 Seth Dior - PETTY [Official Music Video] https://t.co/kvdKG8P4 via @YouTube 2020-12-0 positive			
24	22 RT @Chartsisoo: 3 of JISOON's Photos are in The Top 9 Most Liked Posts on Dior Official In 2020-12-0 negative			
25	23 RT @ATEEZofficial: [] (2020 MAMA) ATEEZ_INCEPTION + Answer Youtube : https://t. 2020-12-0 negative			
26	24 Morning Nursery - Our super ☆☆☆ STAR OF THE WEEK ☆☆☆ is Dior for brilliant 2020-12-0 positive			
27	25 @dior_doll And idk where to watch it 2020-12-0 negative			